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ABSTRACT

The paper focuses on the Title I Evaluation Technical Assistance Centers to illustrate issues of measuring costs and deciding on outcome criteria before promoting "cost-effective" approaches. Effects are illustrated for varying resource allocations among personnel, travel, materials, and phone costs as a function of emphasizing workshops, on-site consultations, phone consultations or material mailouts as assistance strategies. Accounting for staff time by type of activity such as workshop preparation presentation, travel, and materials development is illustrated as another method to analyze resource allocations or costs. Outcomes which might be indirect indicators of effects such as number of workshops provided, clients served, or consultation hours provided are contrasted with more direct indicators such as number of districts with "high quality" reports, number of cases in which evaluations are used or client satisfaction with services. Finally, the feasibility of actually conducting cost-effectiveness studies is questioned. Sponsors, service providers and clients will value different outcomes. It is helpful to make explicit the relationship between resource allocations and desired outcomes to minimize potential conflicts among these groups. (PN)

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COST EFFECTIVENESS IN EVALUATION TECHNICAL ASSISTANCE:

DIFFERENT ASPECTS OF MEASURING COST AND OUTCOMES

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COST EFFECTIVENESS IN EVALUATION TECHNICAL ASSISTANCE: DIFFERENT ASPECTS OF MEASURING COST AND OUTCOMES

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Background and Problem

This paper focuses on the Title I (now Chapter I) Evaluation Technical Assistance Centers (TACs) to illustrate issues which need to be considered prior to promoting "cost-effective" strategies for innovations or programs. Previous presentations in this symposium examined issues about TAC activities, goals and effects including cost-effectiveness. The need for clarifying these issues is illustrated through statements from several reports. First Millman in Reisner, et al., (1982) states:

> The cost of TAC assistance is high relative to the amount of service provided
>
> -- EDs should consider options for reducing cost while maintaining the current quality of services.

Most readers would conclude from the statement that (a) providing services was an objective or "effect" expected of TACs, (b) the quality of services was satisfactory and (c) the methods used to provide these services were too costly for the level provided. Only a vague evaluation of the quality of TAC services is implied with a strong reference to cost and level of services.

Stonehill and Groves (1983) conclude TACs are effective:

> Subtle yet often important influences and revisions on program operations have been brought about through the implementation of TIERS and through the efforts of TACs.

They address TAC effects more directly than Millman and without any reference to costs. Reisner, et al., (1982) are even more explicit about TAC effects:

> Through technical assistance centers (TACs), state education agencies (SEAs) and local education agencies (LEAs) have learned new evaluation approaches and new ways to use evaluation data to improve educational services.

This statement explicitly addresses the effectiveness of TACs and again does not interpret costs or cost-effectiveness. These three statements probably give different impressions of TACs.

Different effects are implied in the above statements. Stonehill and Groves suggest the changes in programs; Reisner, et al., focus on learning new evaluation approaches and using evaluation data. Millman's evaluation based on costs leaves a much less positive impression regarding TACs and implies effects are the level of services provided.

It appears that TACs have some good effects. How good depends on what is/is not included as effects and whether or not costs are included in the evaluation. Further, TACs have several options for allocating or using their resources to produce any combination of desired effects. I want to review TAC costs, effects, and some alternative strategies to highlight the implications of different approaches and variables in making decisions about TACs.

I will: (a) describe alternative cost analysis approaches which might be used in conducting a cost analysis, (b) analyze costs for alternative technical assistance emphasis, (c) discuss criteria which might be used to measure effects, and (d) discuss implications for using cost analyses techniques to plan or manage programs so that funding agents, clients and program staff are satisfied with the program.

Levin (1981) provides a manual for conducting cost analyses in evaluating educational programs. Table 1, from Levin, describes four approaches in terms of distinguishing features, strengths and weaknesses. I will relate them to technical assistance centers. A <u>cost effectiveness</u> analysis of technical assistance centers might be one which defines effects as the number or proportion of districts which submit annual evaluations with sufficient quality to be aggregated at state and federal levels, and which compares these effects to the costs of services to assist districts to produce these

Table 1

Modes of Cost Analysis[a]

Type of Analysis	Distinguishing Feature	Strength	Weaknesses
Cost-Effectiveness (CE)	Outcomes are measured in units of effects.	The outcomes can be psychological or physical changes and do not require conversion to monetary values. Analysis replicable.	The unit of effectiveness must be the same among alternatives which address a particular goal.
Cost-Benefit (CB)	All outcomes are in monetary values.	Single metric allows comparison of different alternatives; or comparison of projects in different areas competing for the same resources. The results can be expressed in internal rate of return, net benefits, or cost-benefit ratios. Analysis replicable.	Often difficult to get outcomes in monetary values.
Cost Utility (CU)	Outcomes are measured according to subjective judgements.	Can integrate multiple outcomes into a single value.	Measures are highly subjective; and analyses are not replicable.
Cost-Feasibility (CF)	Estimate whether the cost of an alternative is possible within the financial constraint.	Indicates if further consideration of that alternative is feasible.	Does not deal with the outcomes of an alternative at all.

[a]From: Levin, H. and Seidman, W., 1981

evaluations. The technical assistance approach which minimized the cost per valid/useful report would be chosen as cost-effective. A cost benefit analysis would differ in that the effects would be specified in monetary terms to determine whether the outcomes in dollars was equal to or greater than the cost necessary to obtain the benefits. A technical assistance strategy would not only need to have an optimum ratio, but should also have benefits which exceed costs. A cost utility analysis might use effectiveness criteria that are converted to a common scale of utility and then relate these criteria to the cost for providing technical assistance. Examples of criteria are client ratings of satisfaction with TAC services or, subjective assessments of how likely the strategy is to produce good reports. The strategy which maximized the utility/cost ratio would be desired. A cost feasibility analyses could simply be whether the desired technical assistance services can be provided within the available budget. If yes, then provide or fund the services.

A further illustration of the differences among the four alternatives is obtained by assuming that the cost or the resources available for technical assistance are a fixed quantity. Then decisions among alternatives would rest on effects. Specifically, the cost effectiveness study mentioned above would reveal which approach or alternative produced the greatest number of aggregatable district reports. The results from the cost benefit and cost utility analyses would be similar except that the criteria for cost benefit would be the approach that maximized the outcome in dollar values and the criteria for cost utility would be the approach which maximized utility. Finally, decision alternatives within the cost feasibility would be to determine if the desired technical assistance could be provided with the available resources without specifically considering effects.

It should be clear that the analyses with the exception of cost feasibility assume:

a. it is possible to specify and agree upon program outcomes or objectives and to obtain adequate or comprehensive measures of these outcomes;

b. it is possible to specify costs for the inputs necessary to produce the desired outcomes; and

c. that a relationship between inputs and outcomes exists such that differential inputs can be related to predictable outcomes.

I will not address the issue that resources for technical assistance centers might be used for other purposes such as reducing the national deficit. It is also not reasonable to express TAC effects in dollars. Finally, given the fact that TACs are funded and operational, I will not address the cost feasibility or utility of TACs as a system. I will focus on cost and effect implications for alternative emphases of TAC services.

Identifying and Analyzing Costs

Levin (1981) outlines three questions helpful in identifying costs for alternatives:

1. What are all the resources or ingredients required in order to have a program?

2. What does it take to have a program?

3. What are the program's social cost?

He also relates that ingredients or costs can be distributed across groups such as sponsors, service providers and clients. This paper will be limited in the following ways. First, costs to the sponsor, i.e., United States Education Department (USED), will be primarily restricted to funds for the TACs. Thus, the cost to USED for monitoring the TACs, writing RFPs and

selecting the contractors are not addressed. Second, cost to clients will not be estimated in monetary terms but will be proportioned among 10 points, solely to emphasize differential client costs for the alternatives. Third, technical assistance costs will be reported as percents for an unspecified, but fixed dollar amount. Alternative approaches to providing technical assistance will simply be defined by how this fixed cost is proportioned across the cost categories.

Evaluating Costs. Levin (1981) provides five techniques for evaluating cost. These are summarized in Table 2. They are presented here to highlight the techniques available and provide brief comments on potential applicability to the TAC context. The annualized cost and present value appear to have the least usefulness for our purposes or assumptions. An exception might be in the field office option in which the initial cost in setting up a field office might be annualized across years. A joint cost approach might be useful if a technical assistance center was to base its budget or costs on the shared use or business potential from TAC activities. TAC services or costs might be provided "below cost" if additional contracts for service, materials, or other returns for TAC effort could be projected. This would certainly require a major policy change toward federal support for TAC services.

Market prices and shadow prices are interesting in the context of TAC services. Specifically, in trying to value TAC services one might ask, "What should they cost?" Millman implied market price, by stating TAC services cost more than university professors or consultants working out of their homes. A report of CCSSO Consolidation Evaluation Task Force (1982) appears to apply a shadow price for TACs through their support for continuing TACs. It is important to note, however, that their willingness to support was under the

Table 2

Valuation Techniques[a]

Technique	Definition	Conditions for Use
Market Prices	The price for an ingredient in the open market.	For market goods
Shadow Price	The value of the sacrificed alternatives as indicated by: a) the price of an approximate market or other equivalent for a non-market good b) people's willingness to pay for an ingredient	For non-market goods
Joint Costs	The proportion of an ingredient's value allocated to the alternative under consideration	For ingredients that are put to multiple uses
Annualized Costs	An equal payment made annually that accounts for multi-year projects and foregone interest Given an initial cost, C, for an item of capital equipment, its lifetime, n, and the social rate of discount, r, the annualized cost of capital is given by a(r, n) multiplied by C, where a(r,n) is	For ingredients with life spans of more than one year
Present Value	A single figure for a stream of future costs discounted at the appropriate interest rate	For ingredients that have on-going costs

[a]From Levin, H. and Seidman, W., 1981

condition that the funds were not directly from their resources, and "TAC funds" were not available for states' use. In fact, "willingness to pay" or shadow price would inevitably be different if clients were given the resources to do with as they wanted.

Costs for Technical Assistance Alternatives

Following is a list of seven categories or ingredients which are used to define the cost for providing technical assistance.

Personnel: Personnel costs are the salary and benefits associated with supporting staff.

Travel: Travel costs are those associated with transportation and subsistence.

Phone: Charges for long distance, WATs and other phone expenses.

Materials: These include materials produced for workshops and consultations. It includes costs for duplication and does not include labor costs associated with producing or duplicating materials.

Facilities: These are the office space charges and are proportional to the personnel costs.

Indirect/Fees: General corporate overhead for personnel, management and other indirect costs and fees.

Other: These are costs associated with items such as paying client travel for attendence at regional coordinating council meetings and use of outside consultants.

Table 3 provides the proportion of the 1982-83 Region 4 TAC budget allocated for each of these categories. The existing or present focus for TACs allocates approximately 51 percent of the expenditures for personnel, 12 percent for travel, etc. Millman (1982) reported the following percentages for the 10 Title I TACs from 10-79 through 9-81:

Salary: 45%

Travel: 8%

Indirect fees: 41%

Other direct: 6%

Table 3

Costs for TAC Alternatives[a]

Cost Category	Existing/ Present Focus	More Emphasis on			Field Office	Broker-Purchase by Clients
		Workshops	Consultations	Letters/Phone		
Personnel	51%	- 7%	- 4%	+ 3%	+ 3%	+ 3%
Travel	12%	+ 6%	+ 6%	- 4%	- 4%	- 3%
Phone	1%			+ 1%		
Materials	3%	+ 2%	- 1 %		+ 1%	
Facilities	6%	- 1%	- 1%			
Indirect Fees	23%					
Other	4%					

[a]Table illustrates how a fixed amount of funds would be distributed differently for each alternative. Percents under "Existing" are percents of the 1982-83 TAC budget allocated to each category. Percents in columns for the five alternatives are the shift in the current, e.g., - 7% for workshops in personnel means 7% less of the total budget would be allocated to personnel or that only 44% (51 - 7) would be devoted to personnel.

Thus, costs in Table 3 are slightly higher than Millman's in personnel and travel and substantially less in indirect fees. The major discrepancy in indirect/fees becomes less if facilities are included as indirect expenses. In Table 3 the cost for alternatives to the "Existing Focus" are given as percentage shifts across the cost categories. The emphasis on workshops, increased travel, and materials is six and two percent of the total expenditures, respectively. These increases reduce funds by seven percent in personnel and one percent in facilities. Thus, a workshop emphasis would have fewer staff spending more time providing workshops on-site using more materials. The exact figures are not important, e.g., travel could have been increased by four or 12 percent. The shifts within categories and how resources will be used is the point I hope to make.

A consultation focus would be similar to workshops in that fewer staff would spend a greater proportion of resources in travel. However, consultations require fewer materials than workshops. The example in Table 3 indicates the loss in personnel would be four percent for consultations versus seven percent in workshops. For a staff of 15.0 FTE the workshop option would result in a loss of approximately 14 percent of the FTE (.07 ÷ .51 = .14) or 2.1 FTE. The consultation option would result in a loss of approximately 1.2 FTE.

The letter/phone option decreases the face-to-face contact of TACs with clients and increases phone or mail contacts. The Table 3 example, reduces travel by one-third of the existing costs or four percent of the total budget and redistributes this to personnel and phone. Thus, the savings in travel could allow more staff to spend greater time (double in the Table 3 example) in phone or mail consultations with clients. The additional three percent in personnel would result in approximately .9 FTE additional staff over the existing option (.03 ÷ .51 x 15.0 FTE = .9 FTE).

Establishing a field office is an alternative to maintain high levels of face-to-face contact and to reduce travel costs through closer proximity of TAC to clients. The example redistributed one-third of the travel costs or four percent of the total budget to increased staff and materials. It should be noted that other costs, e.g., facilities, are estimated to remain constant under this option. This obviously would depend on the specifics for a field office arrangement. Given these assumptions, the field office would use decreased travel costs to support more staff spending more time with clients in face-to-face consultations.

Millman (1982) offered an alternative of having clients broker for TAC services to illustrate drastically changing the TAC structure. Briefly, clients would have the option of negotiating with a list of approved service providers, might use RFPs and the proposal process for major pieces of work, and would pay a nominal fee for services requested. This option provides another comparison of how costs/resources might be effected. Table 3 assumes that more personnel costs would be associated with negotiating, planning services and responding to proposals, with consequently fewer resources available for travel and less time with clients.

Table 3 highlights five options to the current technical assistance efforts through increased emphases on workshops, consultations, or letters/phone or through alternative delivery via a field office or brokerage by clients. Using 15.0 FTE for the current option, the alternatives range from 12.9 FTE to 15.9 FTE. Travel costs would range from 18 percent of the total budget to eight percent. These figures, i.e., 12.9 to 15.9 FTE and 8 to 18 percent for travel, illustrate that the alternatives would have proportionately greater effect on the type of contact or assistance provided than on the number of staff available. That is, the number or amount of workshops could be increased by one-half or 50 percent with only a 14 percent

reduction of staff. Finally, these alternatives leave little prospect that major savings could be achieved without reductions in personnel. The four percent "savings" in travel for phone/letter and field office alternatives could be used to reduce the overall budget rather than to increase personnel.

Staff Time. Use of staff time is another way to view costs for technical assistance. Since personnel, facilities and indirect fees are directly related to personnel costs, it appears that 80 percent of resources used is explained by staff and related costs.

Table 4 summarizes information on distribution of costs for professional staff time. Data were taken from the Region 9 TAC Final Report (1983). Field service time is divided into time spent on-site, traveling, and in-house preparation for the field activity. Other direct technical assistance time is categorized by phone/letters and materials development/technical investigations. Materials development and technical investigations is the time for developing workshops or instructional packages for conducting studies for clients. Staff development time primarily includes participating in staff meetings and in-house sessions. Administration includes activities such as performance reviews, supervising budgets and communicating with project officers. Other tasks include time for tasks such as attending TAC Directors meetings, conducting outreach or awareness activities, serving on inter-TAC committees, etc. The last three categories might be viewed as indirect service or support for the direct service activities. Millman provides similar figures for ten TACs in December, 1981 and January, 1982. His 11 percent for field service probably reflects the lower level for these months and differences across TAC. Peak field service periods were September-October

and March-May. Again, it should be noted that data in Table 4 are for the Region 9 TAC in 1981-82. The alternatives in Table 4 are those described earlier for Table 3.

The percentages for alternatives were based upon the estimates of shifts in personnel and travel from Table 3. An example will illustrate the derivation of figures in Table 3. The increased travel funds in Table 3 under the workshop option will support approximately 50 percent more trips and travel, i.e., 50 percent more, time was assumed. I also assumed that approximately 50 percent more workshops would be provided with the increased on-site time. To calculate the percent of staff time it was necessary to take into account the loss of staff under this option. It was estimated that approximately .86 of the existing staff would be available to provide the increased level of workshops (this figure was obtained by dividing .44 (i.e., .51 - .07) by .51 in Table 3. The numerator for onsite activities was obtained by adding 10 percent to the 19 percent for 1981-82. The resultant 29 percent is an estimate of the "absolute time" devoted to onsite workshops which would be approximately 50 percent more on-site time than with the existing emphases. Dividing the 29 percent by .86 results in an estimate that 34 percent of the somewhat reduced staff time would be devoted to onsite field service under workshops. This assumed that staff development, administration, and "other tasks" total time would be reduced proportionate to the decrease in the numbers of staff. Thus, the relative increase in travel and onsite time is offset by reductions in preparation and materials development; workshops were assumed to be available and staff trained/prepared to give them. This assumption would certainly be less valid over time due to staff turnover and a need to move onto new topics. It is estimated that phone calls and letters would remain in approximately the same number but fewer staff would result in a slight increase in proportion of time devoted to these areas. In summary,

the workshop emphasis would have staff spending greater proportions of their time on-site with standard, already developed workshops with less need for preparation. One would need to consider the long-term as well as short-term efficacy of this approach.

The consultation option differs from the workshop in proportion of time primarily in the preparation and development area. It is assumed that approximately the same amount of field time would be devoted as under the workshop option with the emphases on consultations rather than workshops. This would imply proportionately greater time would be devoted to preparing for the individualized consultations and would leave even less time available for future materials development or technical investigations. One should consider the intensive tailored benefits of consultations to the more general, awareness type assistance of workshops for greater numbers of clients.

The letters/phone option time distribution was calculated by doubling the amount of time devoted to phone calls and letters, reducing the field services and maintaining a relatively high level of materials development. The rationale for this distribution was that materials will be much more important in support of phone or letter consultations than when face-to-face assistance is provided. Again, one should begin considering use of materials and phone for T.A. in relation to onsite assistance.

The field office differs from the existing operation primarily in that the reduced travel requirements and resources directly contribute to increased staff and time available for conducting on-site activities with only marginal losses in proportion of time for preparation, phone/letters or development.

Finally, a broker/purchase by clients option shifts personnel time to an increased emphases on preparation for field work resulting from planning, writing proposals, multiple contracts. The time presumably would make services more responsive or directed to clients' individual needs. Slightly

greater administration costs or proportionate time would be incurred due to the need to respond to RFPs or conduct more negotiations in deciding on specific services.

Table 4 is also useful in considering the level or amount of services. If more services are provided, two questions are raised: (a) Who will provide them? and (b) How will service providers use their time? Table 3 data reveal only marginal savings can be obtained from non-personnel related categories. Table 4 data estimate that even under the most intensive option (workshops) 44 percent of the staff time will be in the field or on-site. If the field office option was combined with increased emphasis on workshops, the on-site time could be increased more. It is clear, however, that differences among options will not effect time with clients nearly as much as whether the decision is to spend more time face-to-face with clients and less time preparing, developing, coordinating (i.e., staff development) or administering.

Client Time. Table 4 also summarizes a global look at how client time might be spent in relation to the alternatives. The figures represent a distribution of "ten units of time" across (a) planning/coordinating for technical assistance, (b) accompanying or meeting with TAC staff, or (c) providing followup to the technical assistance activities. The primary variations occur in the broker purchase alternative. Specifically, it was estimated that the planning/coordinating demand on clients under this option would be approximately twice those for the other alternatives in which clients have only one TAC to contact, do not have to write/review RFPs or negotiate contracts to secure TAC services.

Table 4

TAC Professional Staff Costs in Percent of Time By Activity[a]

Activity	Existing 1981-82	More Emphasis on Workshops	More Emphasis on Consultations	More Emphasis on Letters/Phone	Field Office	Broker-Purchase by Clients
Field Service:						
On-site	19%	34%	34%	11%	24%	11%
Travel	5%	10%	10%	4%	4%	4%
Preparation	17%	10%	20%	10%	16%	25%
Phone & Letters	10%	12%	12%	23%	9%	10%
Materials Development/ Technical Investigation	30%	15%	6%	34%	28%	30%
Staff Development	6%	6%	6%	6%	6%	6%
Administration	6%	6%	6%	6%	7%	8%
Other: TAC Directors Meeting, Outreach	6%	6%	6%	6%	6%	6%
FTE Base	1.00	.86	.92	1.05	1.05	1.05
Client Time:						
Planning/ Coordinating	3	3	3	3	2	6[b]
Accompanying	6	6	6	6	7	6
Follow-up	1	1	1	1	1	1

[a]Based on 1981-82 Region 9 Final Report.

[b]Assumes more total client time required for this option.

The above analyses all assumed a fixed level of resources and varied the distribution of the resources. Another approach is to determine whether the same services can be purchased with fewer resources. The broker/purchase alternative might reduce cost through more competitive offerings of TAC services. While possible, this was not analyzed here because (a) there was/is a fixed level of resources available for TACs, (b) TACs were funded on a competitive basis presumably resulting in the best quality of services for a fixed amount, and (c) there was need in this paper to maintain a manageable number of variables in highlighting and discussing costs for alternatives.

Identifying Effects or Program Outcomes

This paper will draw upon TAC final reports, the external evaluation by Millman (1982) and the RFP for TACs to highlight commonalities and differences in TAC goals or effects. I will use these to stress (a) the importance of agreeing on effects at as specific a level as possible and (b) the differences in values or evaluations which can occur if effects are left at a general level of agreement.

RFP. The Request for Proposal for Chapter 1 TAC states:

> The TAC emphasis will be on capacity building, e.g., assisting the SEAs and LEAs to become more capable of designing and carrying out the evaluation of their own projects.

Although this statement does not contain a specific effects criterion, it has direct although somewhat ambigious implications for what the outcome of TAC services should be. For example, if the "capacity building" means to implement specific evaluation procedures, than an effects criterion might be the number of districts or states able to do so. Once accomplished, then little need for TACs would exist if one assumes the capacity will maintain across years and staff changes. Stonehill and Groves (1983) clearly relate that effects for TAC were always intended to be broader than just implementing

a specific evaluation. If "capacity building" implies this capacity to conduct better, more useful evaluations in general, then other criteria might be the extent to which clients change evaluation practices, adopt/adapt new strategies, etc. These effects might best be measured through assessing movement on a "levels of use" continuum or movement across topics. Murray and Quilling (1980) discussed change constructs in relation to assessing technical assistance from this perspective and Arter (1983) also discusses changes across topics.

The TAC RFP also provides implicit criteria for effects by describing that TACs will provide workshops, onsite consultations, phone consultations and related types of services. As will be discussed later, "implicit criteria" here might even better be viewed as "inputs" rather than effects. Finally, the RFP states that assistance will cover contents ranging from the required evaluation reporting system to more general issues in testing and evaluation. Additional points contained within the RFP introduce "cost effective" as a criterion:

> ...it is essential for the offerers to consider cost effective methods of providing services and to describe efficient methods of serving the regions.

This is further clarified by:

> ...offerers may want to consider the effectiveness of providing field based staff to provide services to SEAs and LEAs. Possible mechanisms for providing such staff include use of field offices, subcontracts, universities or companies and permanent placement of staff in field locations.

These comments suggest a clear desire to obtain cost effective services. What were viewed as effects and what were viewed as the inputs to produce "local capacity" was less clear. Specific effects or outcomes were open to suggestion by potential contractors and subsequent negotiations or agreements

with the USED. Presumably, these negotiations would make explicit the relation between goals, effects and inputs intended to produce specific effects.

TAC Perception of Goals and Effects. The NWREL TAC Region 9 Final Report summarizes the major goals of TACs to be:

- o assisting SEAs and LEAs to adopt and implement the TIERS, i.e., Title I Evaluation and Reporting System
- o encouraging SEAs and LEAs to improve the quality of data used in program evaluation
- o helping SEAs and LEAS to develop evaluations that are useful for local decision making and helping them learn to apply evaluation results for that purpose.

These goals are related to those in the RFP discussed above; again, specific criteria for effects are not clear. The final report and presentations by Arter (1982 and 1983) rely primarily on effects measured by data contained in monthly management reports. These data include number of workshops, consultations, clients served, hours on site, and contacts made. Arter (1982) summarizes the issues facing TAC in determining impact or effects.

> There are several different approaches that one can take in order to assess TAC impact on evaluation practice. One would be to examine case studies of particular SEAs and LEAs to determine changes due to TAC assistance. Another approach would be to survey the SEAs and LEAs and have them self report on the impact the TACs have had on their own practices... For this study I attempt to use hard data to assess impact. Specifically, I utilize information contained on the contact log with clients available since the beginning of the contract.

Thus, Arter, consistent with the NWREL Final Report, relied primarily on the quantatitive data readily available from monthly management reports. As with the discussion on capacity building, beginning to identify and formalize criteria can guide the direction of TAC services. Specifically, a strategy

which will maximize the number of workshops, may not be the same strategy which will maximize successful implementation of evaluation models and improve quality of data and develop useful evaluations. One can argue that the workshops, consultations, etc., are the means by which these effects are achieved. Maintaining some level of workshops, contacts, etc., might be a desired effect if one assumes a direct relation to quality of data, usefulness of evaluations, etc. Alternately, effects represented by the level of service figures might be the ultimate criteria if the goal were only to provide services. Finally, numbers as levels of service might be viewed as the inputs necessary with the change in topics Arter (1982) discusses as the effects. On the other hand, one might not!

It is helpful to contrast the differences and difficulty in weighing effects if number of clients is the criterion. One client or state might desire TAC assistance with developing materials which the state staff can use. The cost/client for this assistance will be high. If TAC were to provide workshops using the materials rather than develop another set of materials, the cost/client would be lower. If effects are defined to be changes in evaluation use, either strategy might be cost-effective. A cost/client criterion implies the development option is not cost effective. Again, it is important to decide what effects are desired.

Panel Review of TAC Effects. Millman in Reisner, et al., (1982) discusses effects of TAC services.

> The goals of TACs are undergoing a large change. At the time of the 1978-79 Performance Review, the TAC objectives were to bring about an awareness of the requisite evaluation models and their intent, to arrange service agreements, to build confidence and capacity among the clients, and to facilitate implemenation of the models. More recently, the TACs have shifted their emphasis to improving the quality of the evaluation data and making these data more usable.

Millman's findings seem to parallel the intents in USED's RFP and TAC reports. Thus, consistent with the above discussions, the focus appears to be on implementing TIERS, improving quality of data and making evaluations more useful. This statement highlights the fact that goals or effect criteria do change over time. In this case, the goal of getting clients to agree to receive service moved from high priority to an assumed condition with other goals or effects taking its place. Care should be taken to not lose sight of prerequisite goals or effects accomplished or remaining to be accomplished in deciding on effect priorities.

Millman provides one of the more interesting and critical appraisals of TAC effects. Specifically, in a section entitled "Cost and Effectiveness of the TACs." Millman presents the data in Table 5. It is possible that these data were primarily intended to represent the "costs" in the "cost-effectiveness paradigm." Another view, however, is that his relating costs to field visits, hours of assistance, clients served, etc., is the effect part of the cost effectiveness ratio and implies that TACs which produced lower cost effectiveness ratios will be more desirable. One would tend to view a TAC which has $1,090 cost per field unit to be more cost-effective than one with $5,180 per field unit.

It is clear that Millman did not intend TAC effects to be judged solely on the merit of number of workshops, consultations, etc. He states, "The typical SEA evaluator is unquestionably satisified by the TAC performance." He also provides a list of areas in which TACs have provided assistance.

Summary. The above discussion suggests there is some agreement among sponsors, i.e., USED, TACs and clients about TAC goals. General comments from clients as well as USED suggests TACs have been effective in achieving the three goals outlined. Millman (1982) and Arter (1982) discuss effects of TACs. Criteria such as level of service provided, e.g., number of workshops,

Table 5

Cost of Client Services[a]

(November 1979 - September 1981)

TAC	Each Field Visit	Each Hour of Providing Assistance in the Field	Each Client Served in the Field	Each Client Hour of Service in the Field (b)	Each Professional Staff Hour
---	$1090	$230	$130	$36	65
---	1270	310	180	58	37
---	2000	320	90	32	52
---	2660	470	180	56	54
---	2680	450	110	41	30
---	2920	570	190	51	51
---	2950	560	200	49	45
---	2950	850	250	85	61
---	4900	770	250	91	46
---	5180	900	190	75	51
All TACs (d)	$2430	$480	$170	$55	$48

[a]From: Millman (1982).

[b]Estimated using a 3-predictor regression model to extrapolate from recently acquired client service hour data to the November 1979 - September 1981 cost and service data base.

[c]Equal to the total expenditure for the TAC divided by the number of professional staff hours charged to the project.

[d]Weighted average.

and time with clients are the most frequent data discussed. In evaluating or making discussions about TACs, the "hard data" appear to gain much more visibility or stature than the narrative reports on TAC effects. This is unfortunate to the extent that the hard data provide at best an indirect and at most a misleading picture of effects in achieving goals.

Cost and Effect Relations. I have identified criteria which might be used to assess the effectiveness of TACs. (Numbers) are from the Region 9 TAC 1981-82 Final Report:

a. number of workshops/consultations (301)

b. number of phone calls or mail contacts (1,139)

c. number of clients served (4,272)

d. number of contact hours (1,302)

e. number of reports turned in to the states by districts

f. number of districts included in the state report

g. number of instances in which services result in an evaluation in which a program is modified or in an evaluation approach being used

h. client satisfaction with TAC services

i. amount of local capacity built

j. spin-offs such as better tests, testing practices, other programs using materials or ideas

The first criteria (a-d) have extensive existing data as mentioned. The number of reports (e) and number of districts (f) are quantifiable and could be collected. It is also possible that number of instances (g) or client satisfaction (h) could be quantitified allbeit with greater effort and possibly less reliability. Other criteria might also be scaled and collected. Given a fixed cost for providing services during 1981-82, one would arrive at significantly different cost-effects ratios. For example, in Table 5 the cost per client served is less than one-tenth the cost per field visit.

The data in Table 5 further illustrates the range of cost-effective ratios. How one interpretes the ratios is unclear. Millman (1982) concluded that the costs were too high. As stated earlier, it is not clear what criteria were used in making this judgment. The cost of a technical assistance program in the medical field was referenced with additional comments about consultant fees. It is likely that the initial impression that $2,430/field visit, $480/hour of providing assistance in the field were too high were only reinforced or supported by these references rather than the references forming as the basis for the evaluation. In fact, I "feel" the costs are too high as I report them here!

An evaluation of costs might better benefit from considering some basic value assessments rather than using the "semi-shadow" techniques: (a) Are TAC staff overpaid?, (b) Do staff use their time appropriately or on areas desired?, (c) If no, what should be the shift in the use of time (see Table 3)?, (d) Are indirect costs/fees excessive? and (e) If yes, why were contracts given to those contractors? Others could easily expand on the list. I propose these questions will likely result in more constructive implications than comparisons of TACs to university professors, in-home consultants, or other options not directly related to "What to do about TACS?"

Costs and Effects in Relation to Alternatives

Tables 3 and 4 summarize costs for alternatives to the current TAC system. It might be helpful to briefly relate costs to potential effects for each (again assuming total costs are fixed and are only redistributed). These effects are summarized in Table 6. A summary of my interpretations follows. It is inevitable others would make different interpretations based on their assumptions or values. That fact is a primary point of this paper--"a need exists" to be explicit about desired outcomes, costs for providing services and the relation between costs and outcomes.

Workshops: best way to get large number of clients; efficiency of workshops to effect change is either low or unknown

Consultations: good way to effect change and maintain high level of face-to-face contact; number of clients will be low

Phone/letters: loss of workshops decreases numbers and face-to-face time; if time spent on letters or phone is counted then contact time might be high; effectiveness of letters and phone with supporting materials to facilitate use is unknown

Field office: lots of pluses implies strong option; potential detractors not raised in table include increased administrative costs, splitting resources between field and home office, efficient access of field staff to home office, producing or adapting materials, and interchange of ideas among staff

Broker: negative ratings are based primarily on an assumption that the potential for better match of services will not effect increased cost for securing and coordinating services.

Table 6

Effects of Alternative Approaches on Cost-Effective Measures

Effect	Workshop	Consultations	Phone/Letters	Field Office	Broker
Number of Workshops	+	0	0-	+	-
Number of Consultations	0	+	-	+	-
Number of Phone Calls/ Letters	0	0	+	0	0
Number of Clients Served	++	-	-	+	-
Number of Contact Hours	+	+	?	+	-
Number of Reports Completed	?	?	?	?	?
Number of Districts With Good Data	?	?	?	?	?
Number of Instances Evaluation is Used	-	+	?	+	?
Client Satisfaction	?	?	?	?	-/?

+ = Increase in number or level of effect.

- = Decrease in number or level of effect.

0 = No change in number or level of effect.

? = Change not known or predicted.

Another use of Table 6 is obtained if one views workshops, consultations, phone calls, etc., as the inputs for producing effects which were measured by number of reports, client satisfaction, etc. An example will illustrate the point. The goal is to get clients to attempt a process evaluation using a handbook. It is determined that 300 clients can be served in ten workshops on how to use the handbook for the same cost as providing 3,000 clients with the handbook via mail. The number of clients attempting a process evaluation might be measured through follow-up surveys to the workshop and materials mailing. Assume this resulted in estimates that 10 percent of the clients participating in workshops attempted a process evaluation. If at least one percent of the clients who received materials attempted a process evaluation, then the mail-materials approach was the more cost effective strategy. (In the absence of actual follow-up data, literature on change processes or relative effectiveness of workshops, consultations or materials as assistance strategies might provide estimates of the number or percent who would attempt a process evaluation from workshops or materials only.) This example highlights the need for information on (a) the costs for delivering different types of services and (b) estimates of the effectiveness for the different strategies. It would be fairly easy to estimate costs for providing workshops, consultations and mailing materials. One could use these to see what success rates would be required for each approach to be equivalent. These would be better information than simply deciding to serve X number of clients or provide Y number of workshops or reduce the cost/workshop by, or to Z dollars.

It is important to reiterate that any decisions will not rest on one criteria. In the example above, assume that consultations were the most cost-effective approach. If the number of clients served either did not meet the sponsors' need to demonstrate the "spread" of services or the client

support for services was diminished because too few received services, it is likely that other approaches would be adopted or included. If so, it would be easier to point with confidence that the explicit effect or criteria was "spread of services," and was not the number of process evaluations conducted or was a combination.

Conclusions and Summary

One should examine where resources are allocated or used, specify the desired outcomes, and hypothesize a relationship between the inputs and outcomes prior to making decisions about what is or can be "cost effective" programs. Otherwise, stating that program(s) must become more cost effective, is premature, misleading, or counter-productive. In summary, "cost-effective" used loosely can be in-effective because decisions or strategies can be adopted which will not produce the outcomes desired. For example, is the effect to: (a) increase percent of time spent with clients, (b) increase number of contacts or clients served, (c) increase client satisfaction or (d) increase use of evaluation. All might be objectives. It is unlikely that equal priority can be given to all. Deciding what inputs will yield the desired effect(s), analyzing the cost for each input and deciding on a balance is one approach to make operating "the program needs to be cost effective."

The exercise of relating cost and use of resorces in Tables 2 and 3 was helpful to me in reviewing the relationship between alternative resources and uses. Examining the variables which might serve as criteria for effects is also enlightening.

My conclusions are:

a. It is critical to be informed with data about where and how costs are distributed for a program(s).

b. An explicit agreement on the effects and criteria for effects is necessary if a program is to know how to place priorities among goals and objectives.

c. Using information from (a) and (b) in making programmatic decisions will improve efficiency in accomplishing goals.

d. Like evaluations, cost-effect studies will be only one piece of information which is used in decisions to continue, discontinue or modify a program.

Finally, TAC staff can use cost and effects analyses in identifying or selecting strategies which they believe will efficiently or economically lead to their goals. The sponsors, USED in this case, can benefit from their own applications to communicate desired outcomes to TACs, specify data on which those outcomes will be evaluated and analyze assumptions implied in adopting a technical assistance strategy or policy. Making explicit outcomes and relations of cost to outcomes will increase the probability some goal is achieved in which case clients will also benefit. Finally, if all acknowledge that this is a dynamic process in which it will never be the case that all desired effects can or should be specified a'priori, the potential proactive or formative use will be maximized and the "well, that's not what we thought we were about or you have missed some really important parts in your analysis" will be minimized.

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